Appl. No. 09/727,032
Amdt. dated June 23, 2004
Reply to Office action of April 15, 2004

## REMARKS/ARGUMENTS

In a final Office action dated April 15, 2004, the Examiner rejected all the claims under a combination of *Metz* (U.S. Patent 5,448,701) and *Lu* (U.S. Patent 6,202,080). These patents and the prior art, however, do not teach a motivation to combine when considered in their entirety and, if hypothetically combined, would not yield the claimed invention.

The Examiner states at page 4 of the Office action dated April 15, 2004:

> *Metz* discloses a computer system comprising a computer bus coupling together a plurality of bus devices; a bus arbiter coupled to the computer bus, said bus arbiter receiving requests from said plurality of bus devices to obtain access to the computer bus; wherein said bus arbiter resolves conflicting requests from said bus devices based on the workload of the bus devices that request access to the computer bus (Metz's claim 10). *Metz* discloses a first storage means for storing data to be transmitted (*Metz's* claim 10's preamble), which is the queue. *Metz* discloses that each of said plurality of bus devices asserts a signal to said bus arbiter when one or more operations are pending in the queue (col. 1, ll. 29-30, well-known prior art). Although *Metz* discloses the signal indicates the fullness and the queue, *Metz* does not explicitly discloses that the signal includes the number of pending operations and granting based on the number of pending requests. But *Metz* does disclose that it is known to arbitrate based on current workload of each queue (column 2, lines 48-50, the receiving queue's relative emptiness), and *Metz* discloses that it is already known in the prior art to focus on the resource queue's status (column 1, Background of the Invention's last paragraph), hence, *Metz* implicitly discloses that it is known to arbitrate based on the comparison on the source queues' workload.
>
> *Lu* discloses that it is known to monitor and to compare the number of the pending operations in each queue (node) in workload balancing (figure 5, step 704). Hence, it would have been obvious to one having ordinary skill in the computer art at the time Applicant made the invention to adapt *Lu's* teaching to *Metz* because *Lu* enables one to simplify workload distribution without root-level access and ability to function in unexpected situations.

OA of 4/15/04, p. 4.

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Applicant would first point out that to the extent that the Examiner relies on an assertion made in the Background of the Invention section of *Metz* to establish the scope of knowledge in the prior art, the assertion of *Metz* is an admission only as applied against *Metz*. It is not an admission made by or attributable to the Applicant. The Applicant respectfully requests that the Examiner provide independent confirmation of the representations made by *Metz* if those representations are being relied upon to make the instant rejection.

The Applicant respectfully submits that a combination of *Metz* and *Lu* is not suggested by the prior art. Each reference in the prior art must be considered for all that it teaches; it is impermissible to pick and choose elements from the prior art in isolation. *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1550 (1983) ("the district court erred in...considering the references in less than their entireties, i.e., in disregarding disclosures in the references that diverge from and teach away from the invention at hand").

A full understanding of *Metz* and *Lu* shows that these references are very different and would not have suggested to a person of ordinary skill in the art combination in the manner suggested by the Examiner. The teachings of the *Metz* and *Lu* patents are for different buffers and for different reasons. One of the references focuses on an input buffer and the other reference focuses on an output buffer. One of ordinary skill in the art would not have applied a teaching from one of these references regarding an output buffer to an input buffer taught by the other reference, and vice versa, and in any event the claimed invention would not have resulted from or have been suggested by these references.

*Metz* teaches a system having bus 11. Resources 13 connect the bus by way of adapters 15. *Metz* 3: 17-25. Each adapter 15 has an input buffer 19 and an output buffer 21 connected to the bus 11. The input buffer receives data from a resource such as a LAN. The adapter 15 transmits data from the input buffer onto the bus. The output buffer receives data from the bus 11. The adapter transmits data from the output buffer to the LAN. *Metz* 3: 38-47. The controller system determines if an input buffer (i.e., a buffer outputting data *to* the bus) is almost full and if there exists an output buffer that will accept the data for the

almost full input buffer. This minimizes the chances that an input buffer will overflow with data. 3:54-63.

The *Lu* patent teaches that in a multi-computer network, a computer having fewer jobs or tasks than average awaiting execution by the computer should take jobs from a computer having more than an average number of jobs awaiting execution by that computer. More specifically, the *Lu* patent teaches a computer network embodied by a node cluster 100. 3:50-51. Node cluster 100 has a plurality of nodes 110, 120, 130 and 140. *Lu* 4: 8-9. Each node is preferably a powerful, stand alone workstation having considerable calculating and/or graphics capability for executing computer jobs. *Lu* 4:8-12. The nodes are in communication through a LAN backbone 300. *Lu* 4:45-47. Figure 5 of *Lu* shows a flow chart for job balance. Upon finding a job to distribute, in step 704 the job balance object 700 selects the remote node with the least amount of pending jobs. In step 706, the job balance object 700 copies a Job Request File 220 from an overloaded node to the selected remote node. *Lu* 7:23-47. *Lu* concentrates on a buffer that takes jobs *from* the bus for execution by a workstation attached to the buffer.

The primary focus of *Metz*, then, is the buffer that contains data that is about to be placed onto the bus, and avoidance of its overflow. *Lu*, on the other hand, is a workload management system that focuses on the buffer that contains data *from* the bus and is about to be transmitted *to* and processed by powerful workstations. The combination of these references is not suggested by a full reading of the references. A system cannot place the highest priority on both the input buffer and the output buffer. The focus necessarily is on one or the other. Would the focus of a combined *Metz/Lu* system be a warning that the buffer outputting data *to* the bus is about to overfill, or would it be focused on taking jobs from the buffer that takes data *from* the bus so that the workstations attached to the bus each have an even number of jobs to execute? In addition, contrary to the assertions of the Examiner, this difference in goals between *Metz* and *Lu* means that *Lu* does not provide reasoning to keep track of the exact number of operations in the buffer of *Metz*. The issue of workload management for powerful

workstations is different from buffer overfill, which is different from the bus arbitration scheme taught by the instant application. Simply put, a hypothetical combination of *Metz* and *Lu*, would not have yielded or suggested the claimed invention.

If the teachings of *Lu* and *Metz* were hypothetically to have been combined, the result might have been a nearly full warning signal for a buffer that is configured to receive data *from* a computer and to transmit that data to or on a bus. The hypothetical combination might also keep track of the number of jobs pending in a buffer that receives data *from* the bus and transmits that data *to* a computer. The hypothetical combination would not, however, keep track of the number of data packets awaiting transmission onto the bus. As admitted by the Examiner, *Metz* does not keep track of the number of data packets awaiting transmission *onto* the bus. Furthermore, *Lu* is a workload distribution scheme. The *Lu* patent provides no motivation to keep track of the number of data packets awaiting transmission *onto* the bus.

In order to highlight further the inapplicability of the *Metz* and *Lu* references to the claimed invention, each of the pending independent claims has been amended to recite that the pending operations are pending execution onto the bus. In addition, each of the independent claims has been amended to recite that the bus is an internal bus. It is not one that interconnects powerful workstations, as in *Lu*, or local area networks (as that term is conventionally understood), as in *Metz*.
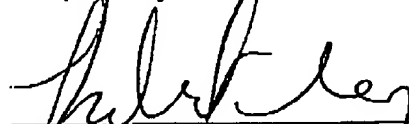
Allowance of all the claims is respectfully requested.

In the course of the foregoing discussions, Applicant may have at times referred to claim limitations in shorthand fashion, or may have focused on a particular claim element. This discussion should not be interpreted to mean that the other limitations can be ignored or dismissed. The claims must be viewed as a whole, and each limitation of the claims must be considered when determining the patentability of the claims. Moreover, it should be understood that there may be other distinctions between the claims and the prior art which have yet to be raised, but which may be raised in the future.

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Applicant respectfully request that a timely Notice of Allowance be issued in this case. If any fees or time extensions are inadvertently omitted or if any fees have been overpaid, please appropriately charge or credit those fees to Hewlett-Packard Company Deposit Account Number 08-2025 and enter any time extension(s) necessary to prevent this case from being abandoned.

Respectfully submitted,

Robert M. Gray
PTO Reg. No. 41,798
CONLEY ROSE, P.C.
(713) 238-8000 (Phone)
(713) 238-8008 (Fax)
ATTORNEY FOR APPLICANT

HEWLETT-PACKARD COMPANY
Intellectual Property Administration
Legal Dept., M/S 35
P.O. Box 272400
Fort Collins, CO 80527-2400

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